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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,436	09/13/2001	Tatsumi Watanabe	50023-150	3632

20277 7590 10/06/2005

MCDERMOTT WILL & EMERY LLP  
600 13TH STREET, N.W.  
WASHINGTON, DC 20005-3096

EXAMINER
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DANG, DUY M

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/936,436

Applicant(s)

WATANABE ET AL.

Examiner

Duy M. Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23,32,40 and 63-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23,32,40, and 63-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's amendment filed 7/15/05 has been entered and made of record.
2. Claims 23,32,40, and 63-67 are currently pending.
3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 40 and 67 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a non-statutory subject matter.

Claims 40 and 67 are drawn to non-functional descriptive material. MPEP

2106.IV.B.1(a) (Nonfunctional Descriptive Material) states:

“Descriptive material that cannot exhibit any functional interrelationship with the way in which computing processes are performed does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. 101.”

“Where certain types of descriptive material, such as music, art, photograph and mere arrangements or compilations of facts or data, are merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing process performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or the computer.”

“For example, music is commonly sold to consumers in the form of a compact disc. In such cases, the known compact disc acts as nothing more than a carrier for nonfunctional descriptive material. The purely nonfunctional descriptive material cannot alone provide the practical application for the manufacture.”

MPEP 2106.IV.B.1 (Nonstatutory Subject Matter) states:

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“When nonfunctional descriptive material is recorded on some computer-readable medium, it is not statutory since no requisite functionality is present to satisfy the practical application requirement.”

In this case, claims 40 and 67 are directed to “a recorded medium”. Such “recorded medium” does not necessarily invoke a “computer readable medium” and thus, is considered as non-functional descriptive material which is non-statutory per se.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 23, 32, 40, 63-64, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wober et al. [US Patent No. 5,740,284] in view of Linares [US Patent No. 6,760,487].

Regarding claims 23 and 32, Wober teaches:

original image orthogonal transforming means for generating the frequency components of an original image by performing orthogonal transform on said specific image data [i.e., the “forward discrete cosine transform (DCT)” mentioned in col. 4 lines 25-27] corresponds to claimed transforming means];

enlarged frequency estimating means for estimating the frequency components of said enlarged image by performing nonlinear interpolation on said original image frequency components [see interpolation for enlarging image mentioned in col. 4 lines 21-22], and

inverse orthogonal transform means for acquiring an enlarged image data by performing inverse orthogonal transform corresponding to said enlargement size on said estimated frequency components of the enlarged image [i.e., the inverse discrete cosine transforms (DCT) mentioned in col. 4 lines 25-27].

While Wober teaches using interpolation to enlarge image, Wober does not explicitly teach nonlinear interpolation. However, using nonlinear interpolation is well known in the art as evidenced by Linares who suggest to use such nonlinear interpolation on frequency components of the original image according to figures 3a and 3 and mentioned in col. 5 lines 47-51.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the nonlinear interpolation as taught by Linares in combination with Wober. Utilizing nonlinear interpolation on frequency component would provide advantages such as more accurate estimation, more pixel information represented image, smoother image, retaining much of the image quality.

Regarding claim 40, it is noted this claim recites a recorded medium on which a program is recorded for carrying out the claimed features called for in claims 23 and 32. Thus, the advanced statements as applied to claims 32 and 32 above are incorporated herein. Wober further teaches the use of computer for image processing [see col. 1 lines 39-41 and col. 2 lines 35-38].

Regarding claims 63, 65, and 66, these claims are also rejected for the same reasons as set forth in claims 23 and 32 above.

Regarding claims 67, this claim is also rejected for the same reasons as set forth in claim 40 above.

7. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wober et al. [US Patent No. 5,740,284] in view of Linares [US Patent No. 6,760,487] as applied to claims 23, 32, 40, 63-64, and 67 above, and further in view of Pawlicki et al. [US Patent No. 5,995,682].

Regarding claim 65, the combination of Wober and Linares fails to teach the use of neural network for interpolation. However, such feature is well known in the art as evidenced by Pawlicki et al. in figures 10-11 and figure 5, items 530 and 555.

Therefore, it would have been obvious to of the ordinary skill in the art at the time the invention was made to use the features as taught by Pawlicki in combination with the combination of Wober and Linares because the advantage of the neural network that of more robust computation.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy M. Dang whose telephone number is 571-272-7389. The examiner can normally be reached on Monday to Friday from 5:30AM to 2:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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dmd  
9/05

A handwritten signature in black ink, appearing to read 'Duy M. Dang', with a stylized, flowing script.

Duy M. Dang  
Patent Examiner